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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,572	01/30/2004	Edwin A. Sisson	MGP.P. US0106	6354

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EXAMINER

BRUENJES, CHRISTOPHER P

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/768,572

Applicant(s)

SISSON ET AL.

Examiner

Christopher P. Bruenjes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 12-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040430</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-11, drawn to a transparent article, classified in class 428, subclass 35.7.
- II. Claims 12-18, drawn to a method of making a transparent article, classified in class 264, subclass 500.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as simultaneously adding inorganic oxidizable composition and a prepolymer composition into a mixer. Followed by polymerizing the polymer to form a matrix having the inorganic oxidizable composition dispersed

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throughout. Then forming the article into a desired size and shape creating domains around the inorganic oxidizable composition wherein the shortest dimension of each domain is up to about 45 microns.

2. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Edwin Sisson on October 4, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-18 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must

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be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 29'. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Share et al (US 2004/0074904 A1).

Regarding claims 1 and 4-6, Share et al anticipate a transparent packaging article (see abstract) comprising a thermoplastic polymer matrix including polyethylene terephthalate, polyethylene naphthalate, or polybutylene terephthalate, which are all polyesters (p.2, paragraph 19), and a polyolefin material (p.2, paragraph 33), and a polyamide material (p.3, paragraph 37). The polymer matrix is filled with an oxygen scavenging material (p.3, paragraph 36). Regarding claims 7-9, the oxygen scavenging material is an oxidizable inorganic metal including iron, especially mixed metal nanoparticles such as cobalt iron oxide nanoparticles (p.3, paragraph 40). Iron and cobalt iron oxide are not miscible in the polymer matrix so therefore, they form a plurality of

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domains dispersed in the polymer matrix. Note the domains are defined in their broadest reasonable interpretation in light of the specification, which teaches that a domain is considered a particle and any void formed around the particle when stretching the polymer matrix. Using this definition, when the article is not stretched the domain is merely the particle itself.

Therefore, because the domain is defined as the particle and the void surrounding it inherently the domains of Share et al encompass the oxidizable inorganic composition, which is the oxygen-scavenging compound. The preferred oxygen scavenger taught in Share et al is the mixed metal nanoparticle including iron, which is taught to have an average particle size of preferably between 5 and 50nm (p.3, paragraphs 40 and 41).

Share et al further teach that the nanometer scale of the particles render them suitable for use in colorless, optically transparent containers, since they are too small to see with the naked eye (p.3, paragraph 41). Regarding claims 1 and 10-11, because the particles are in the nanometer scale the shortest dimension of each domain in the axial plane of the article is inherently less than 32 microns, since the domain surrounding the particle, even when the polymer matrix is stretched and the inorganic composition is oxidized, would not expand more than 1000 times its starting size. Regarding claims 2-3, the

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transparent article is a bottle (p.4, paragraph 48), formed by stretch blow molding (p.5, paragraphs 61 and 63), and therefore the article is stretched.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
7. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Share et al (US 2004/0074904 A1) in view of Maier et al (RE 34,742).

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Regarding claims 1 and 4-6, Share et al anticipate a transparent packaging article (see abstract) comprising a thermoplastic polymer matrix including polyethylene terephthalate, polyethylene naphthalate, or polybutylene terephthalate, which are all polyesters (p.2, paragraph 19), and a polyolefin material (p.2, paragraph 33), and a polyamide material (p.3, paragraph 37). The polymer matrix is filled with an oxygen scavenging material (p.3, paragraph 36). Regarding claims 7-9, the oxygen scavenging material is an oxidizable inorganic metal including iron, especially mixed metal nanoparticles such as cobalt iron oxide nanoparticles (p.3, paragraph 40). Iron and cobalt iron oxide are not miscible in the polymer matrix so therefore, they form a plurality of domains dispersed in the polymer matrix. Note the domains are defined in their broadest reasonable interpretation in light of the specification, which teaches that a domain is considered a particle and any void formed around the particle when stretching the polymer matrix. Using this definition, when the article is not stretched the domain is merely the particle itself. Therefore, because the domain is defined as the particle and the void surrounding it inherently the domains of Share et al encompass the oxidizable inorganic composition, which is the oxygen-scavenging compound. The preferred oxygen scavenger

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taught in Share et al is the mixed metal nanoparticle including iron, which is taught to have an average particle size of preferably between 5 and 50nm (p.3, paragraphs 40 and 41).

Share et al further teach that the nanometer scale of the particles render them suitable for use in colorless, optically transparent containers, since they are too small to see with the naked eye (p.3, paragraph 41). Regarding claims 2-3, the transparent article is a bottle (p.4, paragraph 48), formed by stretch blow molding (p.5, paragraphs 61 and 63), and therefore the article is stretched.

Share et al fail to explicitly teach that the plurality of domains containing the oxidizable inorganic oxygen scavenging composition have a shortest dimension of each domain less than 32 microns, so as to substantially preclude visibility of said domains to a naked eye resulting from oxidation of the inorganic composition within said domain as well as oxidation of the inorganic composition that exceeds the domain but does not exceed 45 microns. However, Share et al teach that especially the mixed metal nanoparticles including iron are used in colorless, optically transparent containers, because of their nanometer scaled size (p.3, paragraph 41), and Maier et al teach that the size of voids surrounding a dispersed particle in a polymer matrix depend upon the degree and balance of the

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orientation, temperature and rate of stretching, and the size distribution of the particles (col.14, 1.13-17). Maier et al also teach that the number and size of domains especially with regard to the size the voids relative to the size of the particle within the void determine opacity and transparency of the article (col.2, 1.21-24). Therefore, one of ordinary skill in the art would have recognized that the degree and stretching, the size distribution of the particles and the ultimate size of the domains including the voids and particles determine the transparency and opacity of the article, as taught by Maier et al.

Thus, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to select the size of the particles and the voids created around the particle of Share et al to form a domain less than 32 microns during stretching of the article, to preclude visibility of the domains to a naked eye resulting from oxidation of the inorganic composition, since Share et al teach that the polymer matrix including the dispersed particles are used to form colorless, optically transparent containers and Maier et al teach that as the domain around the particle increases the transmission of light decreases.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tibbitt et al (US 2005/0170115 A1); Duncan et al (USPN 4,704,323); Norian et al (USPN 4,963,429); Koloski et al (US 2004/0019143 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Bruenjes whose telephone number is 571-272-1489. The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

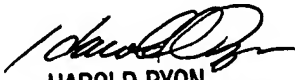
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher P Bruenjes
Examiner
Art Unit 1772

CPB
November 23, 2005


HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

11/28/05